

**Amended Exhibit 1**

**Replaces Original  
Exhibit 1 Submitted  
9/27/18**

**1. Introduction**

By the instant application, NIC4, Inc. (“NIC4”) requests that the Commission grant Special Temporary Authority (“STA”) to permit NIC4 to operate the facilities herein.

**2. Purpose of Operation**

In support of NIC4’s mission to provide rapidly deployable secure satellite communications services, communications infrastructure, and secure managed network solutions to its customers, this experiment will demonstrate the present state of the art in satellite modem technology and network topology to provide significant bandwidth efficiency gains and utilize the dynamic bandwidth sharing capabilities of Mx-DMA technology, and to evaluate proprietary modem technology which has been calculated to reduce the satellite capacity needs of NIC4’s government customer.

Specifically, this experiment will involve ground-based transportable transmissions within 14.4-14.5 GHz from NIC4’s test facility located on the premises of the Shenandoah Regional Airport in Weyers Cave, Va. NIC4 plans to demonstrate the performance characteristics of the MDM-3310 modem, utilizing the 1 meter Aqyre Typhoon antenna system, and the 1.2M Ku band General Dynamics series 1132 antenna in conjunction with the “Maverick” satellite network. The antennas will be located on an asphalt pad adjacent to the runway skirt near the taxiway ramp. The location in which the antennas will be erected includes a stand-alone building of approx. 600 sq. ft. and the distance to the nearest runway is approximately 300 meters (1000 feet). This location is 366.1 meters (1201 feet) above MSL. The height from ground to the tip of the antenna is approximately 1 meter (3 feet).

Waiver of the Station ID rules set forth at Section 5.115 is respectfully requested.

**3. Directionality/Orientation**

Width of Beam at Half-Power Point (Typhoon)	Orientation in Horizontal Plane	Orientation in Vertical Plane
0.65°	231.6°	30.7°
Width of Beam at Half-Power Point (1132)	Orientation in Horizontal Plane	Orientation in Vertical Plane
1.2°	231.6°	30.7°

#### 4. Mitigation of Interference

- NIC4 owns and operates the transponder and has full control over frequency allocation. NIC4 can therefore guarantee that transmissions will remain above 14.4 GHz which NIC4 understands will avoid entirely the NASA TDRSS network frequency range.
- Operations will be coordinated as appropriate with the NRQZ. In addition, operators will coordinate with the satellite operator and the NIC4/NI network operations center. A control point operator will establish telephone communications with the satellite operator before any illumination of the satellite. The control point operator will maintain positive control of all transmissions and will cease transmission immediately upon request of the satellite operator or on request of the adjacent satellite operators.
- The small aperture antennas have narrow beam widths, and the pointing is highly accurate with active micro re-peaking. This feature protects adjacent satellites and mitigates the risk of interference.
- Nearby building structures exceed the height of the antennas, and the antennas sit in a man-made depression, all of which mitigate risks to air traffic. In addition, the emissions should not present a radiation hazard to aircraft pilots or passengers due to the look angle of the satellite.
- During testing, PSD will not exceed limits specified in 25.222.
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